

Financing for Natural Capital in Africa

A FSD Africa briefing paper

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Acronyms

AfDB	African Development Bank
BIOFIN	UN Biodiversity Finance Initiative (BIOFIN)
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
COP	Conference of Parties
CSR	corporate social responsibility
DFI	Development Finance Institute
DFN	Debt for Nature
E4N	Economics for Nature partnership
EIB	European Investment Bank
ESG	environmental, social and governance
GEF	Global Environment Facility
GDP	gross national product
GHG	Greenhouse Gas
GGKP	Green Growth Knowledge Platform
IADB	Inter American Development Bank
LDN	Land Degradation Neutrality
NCS	Natural capital solutions
NbS	Nature based Solutions
ODA	Overseas Development Aid
OECD	Organization for Economic Cooperation and Development
NC4-ADF	Natural Capital for African Development Finance Programme
NGO	non-governmental organisations
NDC	Nationally Defined Contributions
PES	Payment for Ecosystem Services
REDD	Reducing Emissions from Deforestation and Degradation
SANParks	South Africa National Parks
SDG	Sustainable Development Goals
SOF	Sustainable Ocean Fund
SLL	sustainability-linked loans
SLL	Sustainability-linked loans
TA	Technical Assistance
UK	United Kingdom
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wide Fund for Nature
USD	Unites States dollar
USAID	US Agency for International Development

Executive summary

Natural capital spans a spectrum of landscapes from pristine or largely untouched ecosystems underpinned by biodiversity, such as rainforests or remote grasslands, to heavily managed agricultural landscapes.

Almost all African countries face elevated, high or very high risk from climate change and biodiversity loss. Exposure to physical risks is particularly high and rising temperatures and more frequent droughts across the continent can reduce the productivity of agriculture, which is the mainstay of many African economies.

Biodiversity loss of major habitats such as forests, coastal ecosystems and forests threaten not only environmental conditions and livelihoods in Africa but will contribute to more rapid climate change and biodiversity loss globally.

The volume of finance directed at natural capital maintenance and enhancement to tackle these issues is insufficient for Africa. The reality of not meeting this finance gap is stark and would accelerate the decline and potential collapse of ecosystems.

Given these challenges, the paper suggests 5 key approaches to greater mobilisation of finance for biodiversity in the region:

- **Improved global and domestic governance** of financial flows for natural capital could support the generation, delivery and realignment of finance to natural capital protection goals. Standard metrics and baselines are key.
- **Landscape financing** provides opportunities for overcoming barriers to the scalability and replicability of investments in sustainable agriculture and conservation. Landscape financing is considered a key solution for developing a natural capital asset class.
- **Tapping into carbon funds and pledges** to finance large capital investments and 'micro' carbon trading (whereby small community-led projects are funded via carbon credits) could be a key source of finance for biodiversity.
- **Green finance for restorative agriculture:** Restorative agriculture might be attractive to green and impact investors – for example through funds that aggregate smallholder loans into securitisation-based bonds or funds, and 'ring-fenced' funds from DFIs.
- **Holistic and clustered interventions** can increase impact by combining development capital, capacity building and technical assistance to be 'more than the sum of the parts'. This can be particularly useful given the complexity and multidimensional nature of biodiversity.

1 Introduction

Africa is highly exposed to risks associated with climate change and biodiversity loss. The African Climate Policy Centre has calculated that an increase in global temperatures of 1°C would lead to a 2% contraction of Africa's gross domestic product (GDP). An increase of 4°C would lead to as much as a 12% contraction of Africa's GDP. Recent analysis by the European Investment Bank (EIB) shows that almost all African countries face elevated, high or very high risk from climate change and biodiversity loss. Exposure to physical risks associated with climate change is particularly high and rising temperatures and more frequent droughts across the continent have the potential to reduce the productivity of agriculture, which is the mainstay of many African economies. Biodiversity loss of major habitats such as forests, coastal ecosystems threatens not only environmental conditions and livelihoods in Africa but will contribute to more rapid climate change and biodiversity loss globally. (Lemma, Tyson and Tizzani, 2021)

The volume of finance directed at natural capital maintenance and enhancement to tackle these issues is insufficient both globally and for Africa. The reality of not meeting this finance gap is stark: without adequate and appropriate investment, we may witness accelerated decline and the potential collapse of ecosystems.

In this context, a step change in private finance mobilisation for natural capital is urgently required.

Much of the literature on private finance and natural capital has focused on the risks of nature's degradation for continued business operations, and on how to integrate such liabilities into planning and investment for the financial services sector.¹

Given the role of natural capital and the threat posed by the current finance gap to its upkeep, the guiding question to the present research is: 'How can natural capital be an asset class that is investable for private finance?'. Broken down, the question can be understood as:

- RQ1: What is the state of play for public and private investment in natural capital?
- RQ2: Which examples exist of income generation from natural capital that could form the basis of financial asset creation?
- RQ3: What are the roadblocks for private investors to invest in this asset class?
- RQ4: What are the enabling policy conditions needed to encourage private finance to invest in natural capital at scale?

After conceptual framing and problem setting (Section 2), the report lays out the current state of play in terms of finance for natural capital (Section 3) in order to identify the entry points and roadblocks to higher volumes of private finance (section 4), before concluding and recommending potential near-term policy goals (section 5).

¹ For example, see the literature related to nature related financial disclosure requirement tools led by accounting firms (Trust and Henry, 2021), risk insurance (Chandellier and Malacain, 2021); and application to central bank

2 Conceptual framing

2.1 Natural capital definition

Nature can be understood as a functioning ecological structure – an ecosystem – that delivers a flow of ecosystem services which contribute actively or passively, currently or in the future, to aspects of human well-being from pristine or largely untouched ecosystems such as rainforests, or remote grasslands, to heavily managed agricultural landscapes. (Fisher, Turner and Morling, 2009; Díaz et al., 2018; IPBES, 2019).

Nature is underpinned by biodiversity. Biodiversity, is defined under the Convention on Biological Diversity (CBD, 1992) as the “variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part”. It acts as the process that maintains the ecological functions that form ecosystems (Chapin et al., 2011).

Natural capital uses an economic framing within which ecosystems are nature’s asset or capital, and ecosystem services are its flows, which support human well-being. This effectively reframes nature as an asset class which can be quantified, tracked against common targets and valued in monetary terms. (FSD Africa and Vivid Economics, Forthcoming 2022).

A large share of economic activities directly depends on ecosystem services. This includes direct inputs such as agricultural inputs, wood and biomass, enabling production such as supporting agriculture production through pollination, pest control and nutrient cycling, and offering protection from natural ecosystems such as mangroves, corals and wetlands and – arguably, most importantly – global climate regulation. Businesses are also dependent on nature indirectly through their supply chain including inputs, transportation and business locations. Business also affects natural capital through changes in land and sea use, direct exploitation of organisms, climate

change, pollution, and invasion of alien species (Vivid Economics and FSD Africa, 2022).

Undermining biodiversity – i.e. reductions in the number of genes, species and functional groups of organisms – translates into reduced functioning of natural capital, and ultimately, its collapse. Biodiversity loss is non-linear and saturating, meaning that thresholds can be reached beyond which accelerating rates of change are triggered (Cardinale et al., 2012; IPBES, 2019).

Globally, between 1970 and 2016, an average 68% decline in monitored species populations has been observed. In Africa, a 64% decline in monitored species has been caused primarily by two drivers: land use change and species overexploitation (WWF, 2020). Climate change is now accelerating these losses (UNECA, 2021). Unprecedented biodiversity loss has large negative implications for natural capital’s sustainability, and ultimately on human livelihoods (UNEP, 2021).

2.2 Why does it matter?

Human beings rely on natural capital, as do the real and financial economies. Around USD 44 trillion of global economic value generation, about 50% of 2019 global GDP, is moderately or highly dependent on natural capital. Meanwhile more than 25% of financial investments by development financial institutions (DFIs) is directed to projects highly dependent on vulnerable natural capital (Dasgupta, 2021). Dependence of livelihoods on natural capital differs between socio-economic groups and contexts across Africa, but holds an important poverty alleviation role across the continent (Egoh et al., 2012; Noack et al., 2015). Maintenance of functioning natural capital supports essential services for rural livelihoods throughout the continent such as crop production, fisheries and fuelwood production. In addition, functioning natural capital can reduce communities’ vulnerability

to negative shocks and improve resilience in the face of climate change (Ojea, 2015). Hence, continued degradation of natural capital risks will reverse progress made on the Sustainable Development Goals, leading to further entrenchment of poverty (Guerry et al., 2015; IPBES, 2018).

Financing natural capital therefore carries systemic importance to economies and financial markets. Recent analysis shows that a collapse in natural capital services could result in a decline in global GDP of USD 2.7 trillion or 3% of 2021 GDP in 2030. Sub-Saharan Africa would be the hardest hit region, suffering a GDP contraction of USD 358 billion or 14% of 2020 GDP annually (Johnson et al., 2021). The distributional effects on the continent of such a collapse in natural capital could be stark: entrenching rural poverty, accelerating rural to urban migration and potentially increasing land and natural resource conflicts as already witnessed in regions where ecosystems are under stress (Osano, 2022).

This issue has garnered increasing attention and the COP26 held in Glasgow in 2021 provided the opportunity for pledges of public finance to limit deforestation and land degradation, reflecting the fact that Nature-based Solutions (NbS) was one of the key action tracks of the UK-led COP presidency (CB, 2021; UK Presidency, 2021). In total, about USD 15 billion was pledged over the next five years by governments and philanthropies (UK Gov, 2021). This included a pledge of USD 1.5 billion to protect and maintain Congo Basin forests, peatlands and other critical global carbon stores in Africa (UKGov, 2021). The Glasgow climate pact itself emphasises the 'the critical role of protecting, conserving and restoring nature and ecosystems in delivering benefits for climate adaptation and mitigation, while ensuring social and environmental safeguards' (UNFCCC, 2021).

2.3 The mismatch between needs and current financing

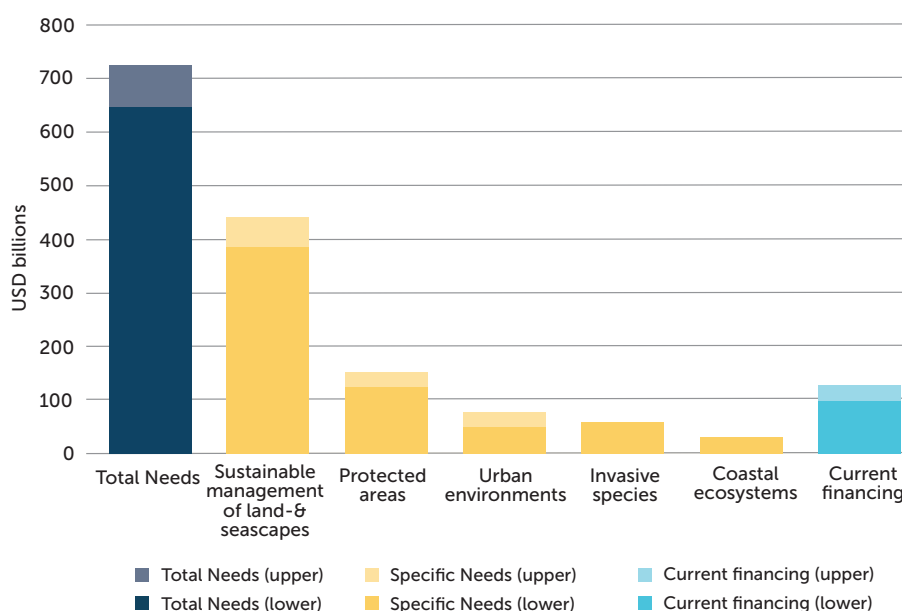
Preventing biodiversity loss and therefore the degradation of natural capital covers a range of actions making a positive contribution to the sustainability of a natural asset: from sustainable agricultural practices such as adopting soil conservation techniques to restoring peatlands, replanting mangroves, re/afforestation, and sustainable forest management and protected area conservation,

including of marine environments. However, while the critical importance of these actions for continued economic development progress is well-recognised, finance allocated to this agenda is not at the scale required to keep pace with current needs (UNEP, 2021).

Such finance is commonly referred to as biodiversity finance, defined as the "practice of raising and managing capital and using financial and economic mechanisms to support sustainable biodiversity management" (UNDP, 2018). Biodiversity finance can be directed towards conservation activities that maintain natural capital, as well as towards rehabilitation. It can include finance to offset unavoidable damage as part of a development project as well.

Estimates of the global finance gap for maintaining or restoring natural capital vary depending on the accounting systems used, but they are consistently large. UNEP estimates the additional investment requirement for NbS, which encompass actions to protect natural capital, of USD 403 billion per year by 2050 (UNEP, 2021). WWF estimates the annual investment gap for conservation to be USD 300 to 400 billion until 2030. Global Canopy's Little Book for Investing in Nature (LBIN) provides the most detailed, and alarming, estimates for biodiversity conservation funding needs. Annual spending will need to be between USD 722 to 967 billion by 2030 to halt and reverse global biodiversity loss (Global Canopy, 2020). If current annual biodiversity finance remained the same, this would produce a financing gap of USD 598-824 billion (Figure 1).

Figure 1 Annual biodiversity finance needs & financing (USD billions)



Source: Global Canopy (2020)

Estimates of current global flows of biodiversity finance vary by source: Global Canopy (2020) and UNEP (2021) provide estimates of USD 124-143 billion and USD 133 billion, respectively. OECD (2020) suggest lower figures of USD 78-91 billion a year globally.

All sources agree that a vast majority of financial flows that support natural capital are from public sources. UNEP, for example, estimates that around 86 percent (USD 115 billion) is from public sources such as government budgets and taxation, publicly-

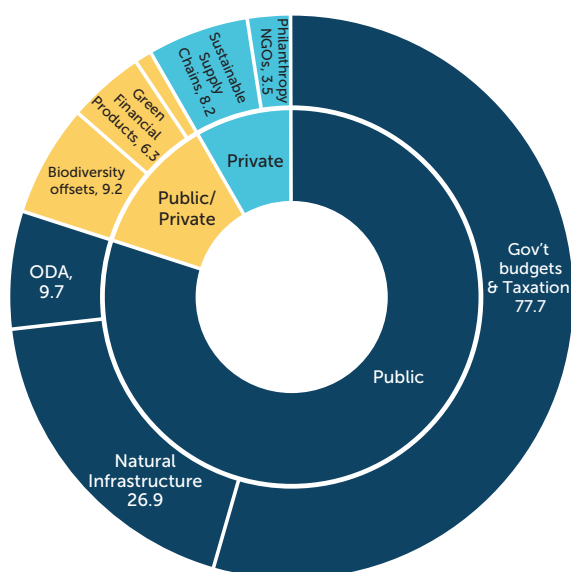
funded natural infrastructure, or overseas development aid (ODA) (UNEP, 2021). Public-private as well as private finance also flow to natural capital through a multitude of vehicles and schemes. Accounting for how much finance is delivered is often difficult given poorly harmonised and standardised monitoring/reporting mechanisms. The reality of the current finance for natural capital landscape is fragmented across many different stakeholders and sectors, industries, both locally and at the global level.

Table 1 Categorisation of natural capital finance sources

SOURCE	TYPE	GLOBAL ESTIMATE
1. Public	a. Government budgets and taxation	USD 105.5-114.3 billion
	b. Overseas Development Aid (ODA)	
2. Public-private	a. Natural infrastructure	USD 10.9-16.9 billion
	b. Biodiversity offsets	
	c. Natural climate solutions and carbon markets	
	d. Green financial products	
3. Private	a. Sustainable supply chains	7.2-11.7 billion
	b. Philanthropic and conservation NGOs	

Source: Global Canopy (2020)

Figure 2 Sources of natural capital finance, 2020



Source: Global Canopy (2020)

Globally, the two ecosystems that currently receive the largest sources of public and private finance are forests and silvopasture (which is mixed grazing and forestry land). Peatlands and mangroves attract considerably less finance despite their importance for carbon storage, in the case of peatlands, and for disaster risk reduction in the case of mangroves (UNEP, 2021).

2.4 Natural capital as an asset class

To plug the biodiversity conservation finance gap, private finance will need to be mobilised to become the dominant source over time. Domestic public budgets do not have the potential to increase sufficiently to close the biodiversity financing gap by 2030, especially in the African context where many governments have limited fiscal flexibility. To mobilise private finance, natural capital needs to be bankable in the form of financially viable projects that protect, sustainably manage, maintain or restore nature.

Asset classes are groups of comparable financial securities with similar financial characteristics and as such often behave similarly to one another: a category of asset class is expected to reflect the same risks and return investments. Well-established asset classes include equities, bonds, cash and cash equivalents, and commodities.

The idea of turning natural capital into an asset class means converting natural capital into financial capital – in other words, of creating a category of financial securities that contribute capital to natural capital preservation and enhancement. Hence the difficulty is to reconcile, on the one hand, a financial security that requires consistency and similar behaviour under global economy drivers and, on the other hand, natural capital assets that are highly heterogeneous with complex interactions and potentially non-linear behaviour, which may be difficult to bundle and are subject to drivers that are highly context dependent.

At present, the largest barriers to financing of natural capital are cash flow generation issues, lack of coherent regulation, lack of suitable funding mechanisms (in part a result of the cash flow generation issue) and limited investment size.

Furthermore, the unequal playing field created by environmentally harmful subsidies from the public and private sector is not supportive of natural capital investment, acting as a 'crowding out' factor (UNEP, 2021).

Scalability and/or replicability of natural capital projects will be key to successfully attracting private finance. Satisfying these two conditions will support the creation of a natural capital asset class. (UNEP, 2021). In September 2021, natural asset companies, a new asset class, were listed at the New York Stock Exchange,

creating a new market. The initiative was supported by the Inter American Development Bank and the first company is set to be in Costa Rica (IADB, 2021).

International climate governance is pointing in the direction of creating new asset classes. States' obligations under the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC) require (Article 2.1c) that new finance architecture must

become climate consistent, i.e. support climate action in terms of low-carbon and resilient development. Such a shift in the global financial architecture would encompass considerations related to natural capital given the linkages between climate action and the role of nature in delivering them (Dasgupta, 2021; Johnson et al., 2021), and can therefore contribute towards the creation of natural capital asset classes.

Box 1: Terminology used in this report - recap

Biodiversity – The Convention on Biological Diversity (CBD, 1992) defines biodiversity as the 'variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part' (Chapin et al., 2011). Biodiversity is the structure that underpins natural capital.

Biodiversity finance – This term covers finance earmarked for conservation, management and restoration of natural capital and the biodiversity that underpins it.

Ecosystem – A natural functioning ecological structure that delivers a flow of ecosystem services which contribute actively or passively, currently or in the future, to aspects of human well-being.

Natural capital – Natural capital can be understood as a functioning ecological structure – an ecosystem – that delivers a flow of services which contribute actively or passively, currently or in the future, to aspects of human well-being including economic activities (Fisher, Turner and Morling, 2009; Díaz et al., 2018; IPBES, 2019).

Nature based Solutions – Actions to protect, sustainably manage and restore natural or modified ecosystems while supporting human well-being (Dasgupta, 2021).



3 Finance for Natural Capital: an overview with a focus on Africa

The geographic distribution of finance for biodiversity is heavily focussed in the Americas. It is estimated that just 3 percent of finance for biodiversity goes to Africa, representing around USD 4 billion in annual investment (calculations based on UNEP, 2021).

This is despite the unprecedented speed at which natural capital is being lost on the continent and Africa's greater dependence on natural capital as a source of human livelihoods. It is estimated that around 60% of natural capital in Africa has been lost over the last 45 years (WWF, 2020).

In this section, the paper reviews in more detail the sources of finance for natural capital in Africa.

3.1 Public finance

3.1.1 Ecosystems, volume of finance and estimated benefits

Government revenues

The vast majority of public finance for biodiversity conservation comes from government budgets, including taxation, fees, tariffs, royalties, charges and subsidies to generate revenue to support biodiversity conservation and/or to disincentivise behaviour that might negatively impact biodiversity. These funds can be administered at local or national level. Examples include fees, fines, penalties and tradeable permits that can be collected by authorities and dedicated to conservation.

In Africa, there are some prominent examples of biodiversity-related fees and charges linked to its famous national parks. Ecosystems

covered by Africa's national parks are associated with the charismatic megafauna, primarily the 'Big Five' (lion, leopard, rhinoceros, elephant and buffalo) in savannah grassland (silvopasture) as well as mountain gorillas and other primates in rainforests.

The largest network of national parks is SANParks (South Africa National Parks), which generated 2.4 billion rand (USD 159 million) in revenues in 2019-20 (SANParks, 2020). Of this, conservation fees generated 787 million Rand, equivalent to USD 52 million².

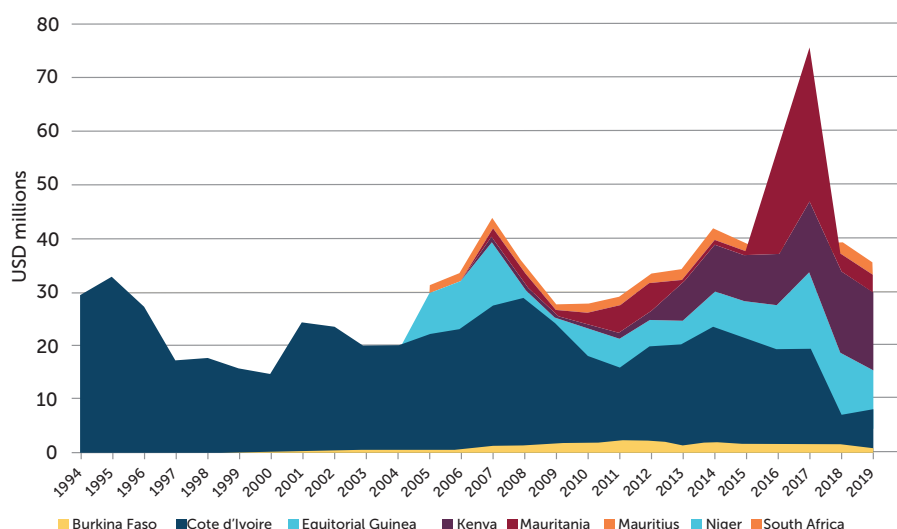
Lack of detailed financial statements make it unclear how much of this revenue is spent on biodiversity conservation in South Africa. The same lack of clarity applies to Africa's other major national parks (excluding those privately or collectively owned).

The OECD PINE database tracks 189 different fees and charges within 48 countries, including in African countries. Figure 3 shows moderate biodiversity-related tax revenue in these countries, which averaged roughly USD 30 million in the past two decades.

This suggests potential for significant increases in conservation fees from tourism in the region to increase park revenues.

² It is also worth noting that revenues have plummeted since COVID-19. SANParks reported that revenue from conservation fees dropped from 787 million rand to 160 million between 2020 and 2021 (SANParks, 2021). However we expect revenues to broadly rebound in the medium term.

Figure 3 Biodiversity-related tax revenue in selected African countries, 1994-2019



Source: OECD PINE (2020)

Overseas Development Assistance (ODA)

However, beyond Africa's national parks, public resources for natural capital conservation on the continent are severely limited. Where there is a tax base, revenues will typically be prioritised towards other development needs such as public health, energy access or food security. There are a handful of biodiversity-related taxes in Africa, including in Burkina Faso, Côte d'Ivoire, Equatorial Guinea, Kenya, Mauritania, Morocco, Niger, the Seychelles and South Africa (OECD, 2020). South Africa also has an environmentally-motivated subsidy in place. However, the revenues generated by these taxes is miniscule compared to the billions in biodiversity finance needed.

Most biodiversity conservation finance in Africa is dependent on ODA. 34% of the USD 4-10 billion per year in global biodiversity-related ODA is delivered to Africa, especially in the areas of environmental protection and forestry, and to a lesser extent in water supply and sanitation, agriculture and fishing (Deutz et al., 2021). Overall, this represents USD 1.3 to 3.3 billion of Africa's total biodiversity conservation finance, making it the most important source.

ODA includes concessional finance, grants and the provision of technical assistance (TA). It can be granted by bilateral donors and multilateral organisations, including multilateral development banks. There is a large overlap

between environmental and economic or social development goals, with just a small proportion of ODA having a primary goal of supporting the conservation or sustainable use of natural capital.

Since 2006, the OECD has made the reporting on biodiversity activities financed through ODA mandatory under the "Rio Markers". However, at present these only capture a portion of the funding commitments from bilateral donors. Data shows that recipient countries in Africa received biodiversity-related ODA which averaged just USD 68 million in the period between 2000 and 2017, far below the estimate of USD 1.3 to 3.3 billion cited above.

Debt-for-nature (DFN) swaps represent a small but growing part of the ODA-biodiversity landscape. Under DFN swaps, countries and entities agree to purchase or cancel a portion of a country's discounted debt obligation in exchange for a recipient country's commitment to invest in an agreed amount of conservation. In Africa, the Seychelles had USD 21.6 million of sovereign debt relieved, which it used to repay loans to the Seychelles Conservation and Climate Adaptation Trust to help implement marine protected areas across 30 percent of its coastal economic zone. Debt-for-nature swaps can be used by private lenders as well, but to date there are no known examples in Africa.

3.1.2 Governance and stakeholders

Given Africa's reliance on ODA for natural capital finance, the major stakeholders include bilateral and multilateral aid institutions linked to biodiversity conservation.

- Chief among these is the Global Environment Facility (GEF) and UN programmes, particularly the UN Environmental Programme (UNEP).
- The UNDP Biodiversity Finance Initiative (BIOFIN) was created to direct countries on how they could finance their biodiversity goals using evidence-based frameworks. Its five-step approach helps countries take various measures, such as developing sustainable finance roadmaps, environmental accounting standards, protected area legislation or green bonds.
- The African Development Bank (AfDB) launched the Natural Capital for African Development Finance Programme (NC4-ADF) in September 2021. The programme seeks to give a central economic role to natural capital on the continent, and is supported by the Green Growth Knowledge Platform (GGKP), the World Wide Fund for Nature (WWF), UNEP, the MAVA Foundation, the International Institute for Sustainable Development, the Economics for Nature (E4N) partnership and the German Federal Ministry for Economic Cooperation and Development (BMZ) via GIZ.

3.2 Public-private finance

Public-private finance in Africa encompasses biodiversity offsets and tradeable permits, as well as natural infrastructure, natural climate solutions (NCS) and carbon markets.

3.2.1 Natural infrastructure

Natural infrastructures are networks of land and water that form natural capital and can replicate the functions, but not the frequency and delivery rate, of built infrastructure. Most commonly they are designated water catchments with water quality and quantity regulation functions (such as river-bank forests, floodplains, or peatlands) within agricultural landscapes. In many parts of the world, these

are maintained by national or municipal authorities.

There are ambitions to develop Africa's natural infrastructure to provide ecosystem services to Africa's rapidly urbanising population. However, there is little information to demonstrate that these plans have been financed, implemented or achieved any material impacts on biodiversity conservation. One exception is the Kenya Pooled Water Fund (KPWF), which provides water utilities known as Water Service Providers (WSPs) to meet water and sanitation infrastructure needs. Supported by Dutch concessional finance, KPWF issues long-term bonds to institutional investors to finance the facility.

Often catchments are managed by a host of small and medium sized stewards such as farmers and pastoralists, especially in Africa. Indeed, catchment managers for most natural infrastructure across Africa are smallholders who, through their farming decisions (for example, crop choice and its water needs, or the soil fertility management technique adopted) actually manage water provisions. There are many examples of publicly funded natural infrastructure (i.e. any protected catchment) mixed with privately funded actions by smallholders.

In this regard, the development of Payment for Ecosystem Services – whereby a beneficiaries or users of an ecosystem service make payments to the providers of that service³ (PES) underscores how small private firms (mostly farming households) hold substantial impact on natural capital's functioning. In 2018, 550 active market based payments of this kind were active globally for a value of USD 36 to 42 billion (Salzman et al., 2018). Data for Africa only was not available.

3.2.2 Biodiversity offsets and tradeable permits

Biodiversity offsets are mechanisms that compensate for adverse environmental impacts resulting from a specific economic activity. They are set up to ensure no net loss. They can be implemented in response to domestic or local policy requirements, financial performance standards or voluntary private

³ Which, according to WWF, can be for (i) Supporting services – those services creating conditions necessary for the provision of all other ecosystem services, for example photosynthesis or soil formation; (ii) Provisioning services – all products coming from ecosystems, for example food, fiber, fuel, herbs and medicinal plants, genetic resources, drinking water; (iii) Regulating services – the capacity of ecosystems to regulate important natural processes, for example regulation of climate, quality and quantity of water, etc.; and (iv) Cultural services – non-material benefits from ecosystems, for example the aesthetic and recreational value of landscapes

sector policies, and therefore represent a mix of public and private sources of finance (Deutz et al., 2020). As outlined in the introduction, biodiversity offsets are not just about restoring, enhancing and protecting resources, but about compensating for unavoidable damage to biodiversity caused by an economic or social development project. The practice, however, remains controversial, with many conservation NGOs fearing the practice validates habitat destruction.

Biodiversity tradeable permits force developers to pay for the right to engage in construction activity that is harmful to biodiversity. These commonly take the form of fishing quotas or auctionable hunting permits. For instance, individual transferable quotas (ITQs) for fisheries exist in Mauritius, Morocco, Mozambique, Namibia, Niger and South Africa (OECD, 2020).

3.2.3 Natural climate solutions (NCS) and carbon markets

Most carbon markets arise from regulatory requirements, often established as carbon taxes or levies which put in place a price on a measurable unit of GHG. There are no legally binding emission reduction targets at national or subnational level in Africa in recognition of the extremely limited contribution the continent has made to climate change (cf. the common but differentiated responsibility principle of the 1992 Rio Convention).

However, project-based offset systems using the Clean Development Mechanism (CDM) exist across the continent. This is a global credit scheme established by the UNFCCC, a market-based instrument for emission reduction under the Kyoto protocol. These projects can be traded with countries in which carbon markets exist. This has enabled the purchase of carbon credits from projects in Africa by foreign investors. But the scheme has delivered reduction mostly in industrial processes with limited finance to land use and afforestation. The scheme has mostly involved China – the African continent only received 3% of all certified emission reduction credits due to the initial difficulty in attracting investors, and of the total 192 registered CDM projects in Africa only 17 delivered action for natural capital protection (Röttgers and Grote, 2014; Kreibich et al., 2017).

Lastly, REDD+ forestry projects are aimed at sequestering carbon and increasing GHG absorption through both soil and forest cover. At least 97 projects aimed at reducing carbon emissions exist in Africa, according to Forest Trends (2022). PES projects have also been used to generate financial flows for private projects, similar to REDD+ programmes but aimed at the protection of certain species, the restoration of watersheds and wetlands (Salzman et al., 2018).

3.2.4 Green financial products

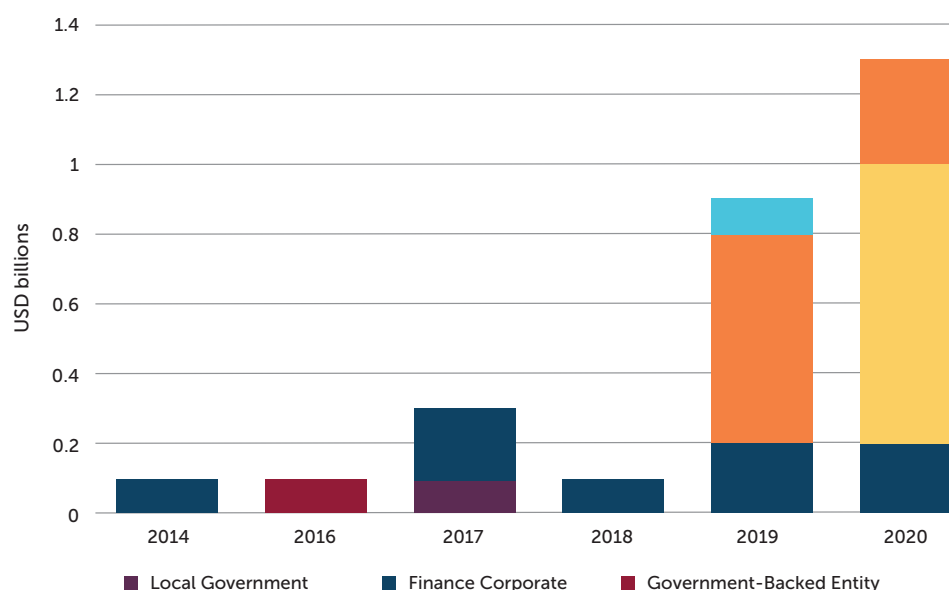
There are numerous financial mechanisms that facilitate the flow of investment capital into companies and projects that have a positive impact on biodiversity. These are grouped under debt and equity – in particular green bonds⁴, green or sustainability-linked loans and specialist private funds – many of which are supported by some form of blended, or concessional finance. 46 percent of all projects and 67 percent of all bonds or notes used some form of guarantee or risk insurance (Convergence, 2020).

The market for green bonds in Africa is small but growing fast. It has grown from USD 100 million in 2014 to USD 1.2 billion in 2020, although only four countries – South Africa, Egypt, Morocco and Nigeria – have issued green bonds. Until recently, these have been corporate or municipal-level bonds, but in 2020 the Government of Egypt issued its first sovereign green bond and raised USD 750 million.

However, the contribution of green bonds to protecting and restoring natural capital has been small. Globally, just 0.5-1 percent of total capital raised via green bonds was directly or indirectly allocated towards biodiversity protection measures (Global Canopy, 2020). So far, spending on African green bond issuances has largely been concentrated on renewable energy and buildings, but in 2020 included significant expenditure (USD 500 million) on water ecosystems.

⁴ Which are fixed-income financial instruments used to finance assets certificated as meeting climate change, environmental or biodiversity criteria.

Figure 4 Green bond issuances in Africa, 2014-2020 (USD billions)



Source: Climate Bond Initiative (2022)

In addition to Africa's green bonds, the Government of Seychelles issued the world's first Blue Bond in 2018. The USD 15 million in proceeds from it are being spent on helping the country to transition to more sustainable fishing practices and protect ocean biodiversity. The bond is supported by World Bank guarantees and a concessional loan to reduce the bond's interest rates.

Green loans or sustainability-linked loans (SSL) are mostly issued by banks and can be used to finance a specific conservation project or, in the case of SSLs, to tie financing to corporate sustainability targets. However, few are linked to biodiversity and this category of lending products is less common in Africa due to the higher risks associated with them. One exception includes Komaza, a Kenyan start-up that provides green loans to farmers to support sustainable forestry.

SSLs are newer but have fast outpaced the green loan market. Their scale is much more difficult to assess, particularly as sustainability-linked targets are broadly defined due to the infancy of the financial product (Global Canopy, 2021).

Structured notes are tied to the performance of an underlying asset, stock, or index. They can be used in natural capital conservation by

investment banks – an example is Credit Suisse, which has partnered with Mirova to issue Credit Suisse Nature Conservation Notes. These are aimed at natural capital projects seeking to reduce carbon emissions from deforestation and to promote sustainable agriculture and land use, including in Africa. Loans issued under the structured note are guaranteed, in part, by USAID.

Green equity is currently the largest public-private source of finance for natural capital in Africa. Biodiversity-related private equity is led by the Mirova Fund, which manages a range of funds dedicated to natural capital, including the Land Degradation Neutrality (LDN) Fund and the Sustainable Ocean Fund (SOF). The former includes three investments in forestry in Ghana, Sierra Leone and Kenya, while the latter finances insect protein production for fish food in Tunisia.

More recently, HSBC and Pollination's Climate Asset Management Fund announced USD 150 million to restore two million hectares of land in five years across Kenya, Ethiopia, Malawi, Tanzania, Uganda and Zambia. It aims to connect local farmers on the ground with new revenue streams from global carbon markets. Green equity, although private, is frequently underwritten with guarantees from international donors such as the European

Investment Bank, the Inter-American Development Bank or USAID's Development Credit Authority, which committed a USD 50 million risk-sharing guarantee to attract private investment into the SOF.

3.2.5 Governance and stakeholders

Major stakeholders in public private finance for natural capital are:

- UN coordinated initiatives such as REDD+ and the CDM which constitute international carbon markets. While REDD+ essentially focuses on forests, CDM projects may be technology focused – for example, clean cooking stoves – rather than being uniquely focused on natural capital. These two initiatives have UN-backed monitoring and reporting systems in contrast to voluntary carbon markets where different accounting and reporting co-exist.
- National governments which play a key role in green bond issuance and which, under their Nationally Determined Contributions (NDCs), have legally committed to mitigation and resilience goals and quantified targets that link back to natural capital protection.
- Private certification issuers for the voluntary carbon markets such as the Climate Bonds Initiative which ensure the environmental integrity of the carbon credit issued and bought.
- Mirova and Credit Suisse are the leading fund managers/financial institutions working in this space, and have experience using concessional finance from various sources.

3.3 Private finance

Estimating private finance is challenging, as the private sector typically does not monitor and report biodiversity finance. There are two main channels of biodiversity finance that are purely private: supply chains and related business operations, and philanthropies.

3.3.1 Sustainable supply chains

Historically, the impact of supply chains on natural capital has been large, driving land-use change and natural resources depletion. In particular, international trade has been found to cause 30% of global species threats (Lenzen et al., 2012). In terms of reach, aligning actors involved in supply chains to financing of natural capital sustainability objectives would leverage a large shift, given the impact upstream

supply chains actors have on natural capital management (for example, farmers, fisherfolk or miners).

Some private sector firms are shifting towards more sustainable production practices by transforming existing supply chains to improve production practices in view of business continuity. This is often done in alignment with Corporate Social Responsibility (CSR) and Environmental, Social and Governance (ESG) goals. For example, the African Investing for Impact Barometer found that USD 428.3 billion in assets across Africa were being managed according to ESG risk criteria in 2017.

Many initiatives gathering businesses around a specific objective exist. Those with the largest company membership are the Consumer Goods Forum, the New York declaration on Forests, the G7 Fashion Pact, the Business for Nature Coalition, the UN Global Compact and the International Council of Mining and Metals (Deutz et al., 2020). This transition is also a reflection of evolving private standards particularly in high-income countries which often rely on low-income countries' natural capital for their traded consumption (Lenzen et al., 2012).

Third party sustainability standards such as environmental certifications and ecolabels aim at more sustainable supply chain management to ensure the preservation through time of the natural capital underpinning business activity. There exist 455 ecolabels in 199 countries across 25 industry sectors currently (Ecolabel Index, 2022). So far, most certifications, and hence efforts, have concerned forest ecosystems i.e. labels certifying a product is deforestation free (Deutz et al., 2020).

Assessing the scale of finance flowing to more sustainable supply chains is difficult given that much of this accounting takes place in unpublished business operations. However, one study indicated that sustainable supply chains allocate USD 5 to 8 billion per year to the sustainable management of natural capital (Deutz et al., 2020).

3.3.2 Finance from philanthropies and private conservation

Globally, philanthropic donations have only recently started to target environmental causes. Several conservation NGOs funded by philanthropy and business-related philanthropic foundations contribute to natural capital conservation through private donations, including WWF, the Nature Conservancy, the Ford Foundation or the Bezos Earth Fund. To date, only 8% of family philanthropies' funding globally has gone towards conserving the environment (Rockefeller, 2020).

Environmental philanthropy is an increasing trend, though. For example, European philanthropic foundations contributed Eur 182 million in 2012, growing to Eur 746 million in 2018 (EFC, 2021). But only a fraction of this figure goes to natural capital, estimated at Eur 359 million in 2018, with other portfolios including energy, transports, trade and finance.

Globally, finance from philanthropy going to natural capital is estimated to be between USD 222 million (OECD, 2020) and USD 4 billion per year (Global Canopy, 2020). Examples of recent private donations include, for example, the Bezos Earth Fund which, alongside several governments, is contributing towards the USD 1.5 billion Congo Basin pledge announced at COP26. But the largest commitment ever made from private funding to biodiversity was announced in 2021, when 9 private foundations decided to fund the 30x30 global goal, which aims at protecting 30% of the planet by 2030, with USD 5 billion over 10 years. This goal was set out by the High Ambition Coalition for Nature and People which comprises a group of 70 countries (WCS, 2021).

3.3.3 Governance and stakeholders

Governance of private finance for natural capital depends on national jurisdictions.

As such, there is variation in the rules and standards that encourage firms to assess their environmental impacts, and these can be convoluted. For example, modern multinational supply chains are notoriously long, complicated and multi-jurisdictional, featuring a large number of stakeholders – from upstream small scale producers to processors, logistics service providers, aggregators and retailers across numerous countries (Miroudot and Nordström, 2019).

When it comes to philanthropy, uncoordinated approaches to funding are a challenge, but as highlighted with the recent funding pledge to the 30x30 goal, this approach may be changing.

Challenges and opportunities in Africa

4.1 Barriers to private finance mobilisation

4.1.1 Risk profile of natural capital

Assessing the risk and return profile of natural capital is difficult – but also essential – for private investors.

Difficulties include a lack of data on the physical risks associated with climate change in emerging economies in formats that financiers can use.

By comparison, social and governance issues tend to be better priced into risk ratings because robust, locally-specific information about their probability and severity is available and they have also been subject to the assessment methodologies and experiences of International Financial Institutions (IFIs). (Semet et al., 2021).

An exception is the social risk(s) associated with natural capital projects, especially where the economic rights of local communities may be threatened as a result of the investment. For example, restrictions placed on the use of, or access to, customary-owned natural resources (for example, marine and forestry resources) may deprive people of their livelihoods as an unintended consequence of projects to protect natural ecosystems (BIOFIN, 2018).

Furthermore, financial institutions domiciled or operating in Africa often do not have adequate policies and processes in place to incorporate environmental risk data into decision-making; and individual staff may lack the awareness and skills to mitigate, share and transfer those risks if they are flagged. (Lemma et al, 2021)

The risk-profile within organisations is often complex and motivated by competing commercial interests. The long-term returns that can be generated by a natural capital

investment might compete with short-term gains from investments from the same institution that degrade natural capital. Interviewees highlighted that successful natural capital investments were spearheaded by investors who bought into the relevant project. However, this mainly applied to international (mainly European) investors rather than to African ones, who may face greater constraints (including higher costs of capital) to adoption of a long-term investment horizon.

4.1.2 Scalability of projects

Currently, finance for biodiversity in Africa is delivered in a fragmented manner, with limited coordination among international, national and local investors, creating a lack of sufficient scale to be suitable for most private investors (Global Canopy, 2021).

While there are financial instruments that can be used to overcome the gap between the small size of natural capital projects and the minimum investment size of most private investors, these have not been widely used.

4.1.3 Lack of holistic assessments

An additional problem is that positive impact from a project can be undermined by other damaging activities in the same landscape.

Several interviewees cited the project-focus of natural capital investments as a cause of this. For example, natural capital cannot be protected by focussing on a single cocoa project with the best internal rate of return or ecological performance because conservation or environmental effects such as damage to natural forests or water ecosystems resulting from the effects of such a project can offset this.

Even where a single project is net positive, its effects can be undermined by damaging activities in the same landscape. For example, the positive effects of a sustainable cocoa

project may be reversed by unsustainable palm or rubber production in the same area, or by local villagers felling trees for firewood.

Despite this, most financial institutions (both public and private) are relatively siloed in terms of the projects or sectors they invest in, meaning that they do not properly assess effects in a holistic way within a given landscape.

4.1.4 Lack of financial regulation and adverse fiscal incentives

Governments need to set up clear criteria for what is considered aligned with natural capital finance or not. With few exceptions, financial markets and systems in Africa are too shallow to distinguish between green and non-green financial flows, for both public and private finance. This creates collective action problems, since mitigation or adaptation efforts by some investors are simply undermined by others. More broadly, there are general difficulties in defining – for example – the geographic boundaries of natural capital, which can create further confusion between national jurisdictions (including a danger of ‘greenwashing’ whereby assets are stated to be ‘green’ but have failed to meet suitably high criteria).

Related to the above, there is also an ecological link to the issue of scalability. The benefits of protecting natural capital are transboundary, and may be felt hundreds of miles away from a conservation site (see for example, landscape financing). The Congo Basin, the biggest single stock of natural capital on the continent, spans

six countries. Defining what a natural capital investment is, therefore needs to be consistent across jurisdictions to enable private finance to flow across jurisdictions and to achieve desired environmental impacts across borders. However, this will only be possible if natural capital taxonomies are consistent.

Finally, environmental impact investing has struggled on the African continent (and elsewhere) due to a lack of responsiveness from public actors. Most private investors have a short months-long window in which to make decisions around investments, but governments typically take years.

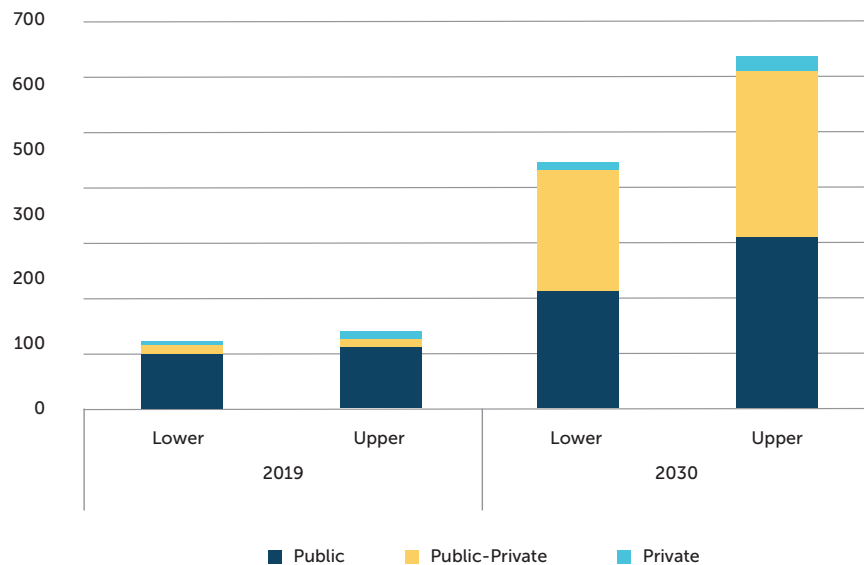
4.2 Entry points for greater private finance mobilisation

4.2.1 Public policy and technical support

The biggest area of growth in biodiversity conservation will be from public-private sources of finance, especially biodiversity offsets. The market for biodiversity offsets is predicted to grow from USD 6.3-9.2 billion in 2019 to USD 162-168 billion in 2030. The market for natural climate solutions, carbon markets and green financial products is also expected to increase sharply, all of which represent blended forms of public and private finance. In total, the share of biodiversity conservation finance that is public-private is predicted to increase from 9-12 percent (USD 10.9-16.9 billion) to 47-49 percent (USD 218-301 billion) (Figure 5).



Figure 5 Growth in sources of biodiversity conservation finance, 2019-2030 (USD billions)



Source: Global Canopy (2020)

Governments can develop positive policies to support this, and development partners can provide technical assistance to governments to accelerate development of regulatory and enabling environments. Specifically, governments and development partners can draw up policy in six areas:

1. Global **green bond** markets are projected to increase to USD 1 trillion by 2030, representing a significant opportunity to raise capital for biodiversity conservation (Chahine et al., 2020). Green bonds are currently oversubscribed, so there is significant potential to raise high volumes of private natural capital by issuing them in sub-Saharan Africa. Some national ministries are in the process of developing national green bond markets with green bonds have already been issued. Others are still not doing this. Technical assistance to assist further development would be helpful. Large partners such as the IMF or the Climate Bond Initiative can give assistance where bonds are issued to finance green infrastructure projects. Other development partners may be better positioned when it comes to natural capital conservation in agricultural or forestry investments.
2. There are no specific criteria available to ensure that small and **medium -sized firm finance** is aligned with nature conservation. There is increasing interest in lending to

SMEs based on whether their activities are nature aligned and climate-compatible, and development partners could provide valuable guidance on this based on existing knowledge and experience of working with African SMEs, which dominate African economies. Providing subsidised lending to green SMEs would also help move existing enterprises away from environmentally-damaging activities. An example can be drawn from South Africa's Green Outcomes Fund, which was launched in January 2020 to incentivise local South African fund managers to increase their investment in Green SMEs by offering outcome-based matched concessional funding (Convergence, 2020).

3. Most governments have drawn up **investment approval** procedures for international investors, including environmental and social criteria. However, these need to be revised in line with increasingly ambitious global efforts to protect natural capital, including rules to integrate natural capital assessments into project appraisals. Processes also need to be agile and responsive to the time horizon of private investors. Development partners can, in addition, guide governments on setting up specialised financial institutions to catalyse international finance into biodiversity. These can be managed by

existing development banks or even central banks, as in the case of Bangladesh (BIOFIN, 2019).

4. **Fiscal incentives** such as tax incentives or the repurposing of subsidies that are harmful to biodiversity can help incentive change. For example, the Seychelles introduced tax deductions for expenditures incurred to obtain certifications, the wages of employees involved in natural capital conservation and other activities (BIOFIN, 2018). South Africa offers tax incentives to private landowners willing to manage and declare private protected areas for conservation within their property, which has helped mitigate the biodiversity conservation finance gap in the country by up to 10 percent (Stevens, 2018). Taxes can also disincentivise harmful practices. For example, Cameroon introduced a forestry tax to better manage the forestry sector, which disincentivised timber production and raised funds that were allocated to sustainable forestry management. Finally, ecological fiscal transfers can help incentivise local governments to reward investment in conservation by tying fiscal transfer calculations to biodiversity conservation indicators.
5. **Biodiversity-relevant positive subsidies** can incentivise positive biodiversity outcomes by supporting activities such as forest management and reforestation, organic or environmentally-friendly agriculture or pesticide-free cultivation (OECD, 2020)⁵. Fiscal incentives can also be offered at municipal-level to support private investment by households and small businesses in natural capital (for example, natural channels for stormwater run-off), green and blue spaces, as well as urban wetlands. This will require significant reform, considering that an estimated USD 274-542 billion of annual subsidies are currently considered harmful to biodiversity (Global Canopy, 2021).
6. **Mainstreaming natural capital impact and risk accounting frameworks** lays the ground for improved labelling, tracking, reporting and verifying, which all form an enabling environment for scaling up private finance in a way that supports the creation of a new asset class. Ecosystem research

efforts have progressed understanding towards a comparable and consistent natural capital accounting system: most notably the initial United Nations-led Millennium Ecosystem Assessment (2005), the the Economics of Ecosystems and Biodiversity (2010), the classification for accounting framework established by the European Union (Haines-Young and Potschin, 2013) and, more recently, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Diaz et al., 2015). The Taskforce for Nature-related Financial Disclosures (TNFD) is in the process of publishing guidelines for standardising methodologies for identifying biodiversity-related risks. This will enable African governments, domestic and international investors to better understand their exposure to transition, physical, legal and systematic risks related to natural capital degradation and loss. Looking ahead, further standardisation would need to focus on key performance metrics and quality standards so that what constitutes a natural capital asset class is harmonised and consistent across public and private investment. To help mainstream biodiversity impact metrics, development partners could promote the use of, for example, the Integrated Biodiversity Assessment Tool that provides global biodiversity information.

Government support can be delivered through grants and technical assistance for national governments. It will also involve close coordination with existing entities providing such support, including the African Development Bank and the UNDP Biodiversity Finance Initiative (BIOFIN).

4.2.2 Landscape and community-based finance

Landscape financing offers significant opportunities, where landscapes are defined in socio-ecological terms rather than purely ecological ones.

However, landscape financing requires complex coordination across supply chains – both vertical (for example, between smallholders and processors) and horizontal (for example, between private sector competitors and different end-users). Everyone

⁵ There are numerous risks associated with well-intended subsidies as well. For example, Chile's tree-planting subsidy led to the forest area in the country doubling between 1986 and 2011, but also led to a decline in biodiversity as the size of native forests declined by 13 percent (Global Canopy, 2021).

needs to be on board, which requires thinking beyond a single farm and across all linkages, bringing in smallholders, commercial farmers, large-scale farms, urban consumers and forestry, as well as indigenous communities.

In some settings, landscape financing is also referred to as community-based financing to reinforce this point. Spatial analysis shows that indigenous people contribute to the protection of 80 percent of global biodiversity, despite making up less than 5 percent of the global population. Land trusts and community conservancies can be created to involve communities, following the example of Namibia's and Kenya's conservancies. Landscape financing also entails financing across different jurisdictions. Most supply chains are not just confined to one small geographical area, but cut across borders and therefore also financial systems. The advantage with landscape financing is that it offers scalability, both in terms of the natural capital protected and in terms of the asset class to be developed.

The main opportunity for development partners in developing such an asset class would be to bring together a portfolio of landscape investments – for example, from existing investors and potential new investors at local, national and international level. Different investors would require financial instruments to suit their individual risk profiles and needs – for example, low-interest loans, first-loss guarantees, etc. The right kind of regulatory and enabling environment for the landscape investment will also be required.

Conditions for successful landscape financing have already been created in other parts of the world. Secure land tenure and use rights of village communities is considered crucial, as is the financial literacy of local farmers, communities and SMEs who own or have used rights to natural capital.

However, the most significant lessons can be learned from cities, where landscape finance is well-developed. To date, little has been achieved in rural settings with the exception of the extractives sector. In agriculture, forestry and conservation (for example, ecotourism), development partners can help coordinate such financing by bringing relevant actors in a particular landscape together, similar to the efforts that FMO, the Dutch Development Bank, are making, particularly in forest landscapes. Early design capital is often unavailable, but the most crucial role that development

partners play is in convening portfolio actors and partnering with key businesses and organisations in Africa who desire this sort of solution.

To date, most successful landscape partnerships have been convened by non-profit entities, but to achieve scalability they require multi-institutional platforms with skilled negotiators to demonstrate the mutual benefits for all entities involved. Development partners could provide this with partner countries, given their connections with government, SMEs and larger-scale investors. Development partners can also help build capacities among counterparties on the ground, especially smallholder cooperatives and informal SMEs. Potential landscapes mentioned in interviews include the dairy industry, vertical farming, palm oil and cocoa, recognising that many different landscapes are often interlinked in complex ways.

4.2.3 Community engagement

Our interviewees highlighted the importance of domestic finance in ensuring that a natural capital investment – and thereby asset classes in the long-term – remained sustainable. There are a few different dimensions to this, the most important of which is that local communities and specifically those who protect the natural capital benefit from the investment. Finance schemes to protect natural capital, notably PES programmes, will not function if those who manage natural capital (such as local people) do not benefit from them. They need to be designed with equitable benefit-sharing arrangements that support communities controlling the use of the natural asset.

The second dimension is that for the asset class to become sustainable, capital from the local economy needs to flow through it. In the African context this will primarily involve SMEs who need access to finance to support natural capital. The majority of SMEs in sub-Saharan Africa are credit-constrained and many engage or fall back on unsustainable practices that can destroy natural capital, especially when affected by increasingly frequent climate shocks.

Finance can be channelled to SMEs to promote natural capital through sustainability-linked loans, as well as through bundled risk insurance products. For instance, crop or livestock insurance can be bundled with products or services that promote biodiversity conservation, such as training on climate-smart agriculture,

organic fertilisers, soil moisture sensors or solar-panelled irrigation pumps. Value-added services can be financed through insurance premium savings achieved through the bundled product's risk mitigation, or through concessional finance from international climate funds targeting climate adaptation, such as the GCF.

Third, there is a fast-growing market for natural capital, especially in the hinterlands of large urban centres such as Lagos, Kinshasa or Nairobi. Some international companies in the garment, tea/coffee or cocoa sector have recognised this already, but development partners would be well-placed to support local companies to seize such opportunities in the coming decades. The forestry industry in Gabon or the tea industry in Kenya serve as useful case examples of how this can be achieved.

Aside from providing finance and advisory services to local companies, development partners can reinforce domestic public markets. Stock exchanges in Africa remain small (with the exception of the Johannesburg Stock Exchange) but they are growing – including becoming pro-active in setting up green stock exchanges and green bond markets (Tyson, 2021). These initiatives should be extended to regulating and financing natural asset companies. Plans to introduce a sub-index to the New York Stock Exchange could provide a blueprint for this, including an accounting framework for assessing how ecological performance would be measured.

A second option is to develop domestic public markets for carbon credits, either by extending the European Emissions Trading System or by creating regional or national emissions trading systems in Africa. Such markets should include access for micro-carbon trading to allow small-scale, local projects to be supported via carbon trading.

4.2.4 Financial instruments for natural capital

As indicated above, natural capital and landscape financing requires financial instruments to suit the needs and especially the risk appetite of different investors.

De-risking in the form of blended finance remains absolutely crucial, especially when it comes to incentivising private investment with an environmental impact. As such, public finance will continue to play a crucial

role in de-risking private investments, for example through sustainability-linked loans or guarantees.

This will include a range of different financial instruments aimed at sharing financial risk within a landscape portfolio. A keystone to this is that landscape or community-based financing is considered lower-risk than other forms of investment, since there is a sense of collective ownership. However, evidence for this is limited. Development partners could strengthen the evidence base and thereby provide demonstration effects through effective monitoring and evaluation of landscape financing. Risk data and transaction records would feed into improved transparency of the market. Over time, the share of public compared to private finance would decrease as information on commercially viable natural capital investments becomes available. Another option would be to highlight climate-related risks to domestic African investors and thereby facilitate a cultural shift in progressive risk management practices. While the level of awareness of business risks related to biodiversity loss is increasing, there is further work that can be done to help private investors – both domestic and international – to identify, assess and manage such risks. It is evident that sub-Saharan Africa is at greater risk of the detrimental effects of climate change and its consequences on natural capital than other geographies. This includes operational risks to investments due to temperature rises, extreme weather events, droughts or flooding caused by increased rainfall variability. African investors therefore have more of an incentive to invest in natural capital to mitigate the effects of climate change than international investors. However, these risks need to be quantified and the data provided at national or sub-national level to enable investors (both domestic and international) to manage them. (Lemma et al, 2021)

Finally, structured financing may allow private investors to bridge the gap between the size of most conservation projects and the minimum investment size of investors (Global Canopy, 2020). To support sustainable supply chains, sustainable payables finance, sustainable trade loans, smart contract solutions and sustainability-linked loans can be explored as a way of promoting biodiversity conservation among actors in the supply chain.

Conclusion

The natural capital finance gap is large and growing, undermining our planet's vital biodiversity. Five key avenues for increasing private finance flows to natural capital are proposed: improving and making use of global governance, landscape financing, carbon funds, green finance and holistic interventions.

5.1 Global and domestic governance

Different domestic priorities, national agendas and accounting frameworks for natural capital can affect the efficacy of financing mechanisms, especially as many ecosystems are transboundary. Consequently, improved global and domestic governance of financial flows for natural capital could support the generation, delivery and realignment of finance to natural capital protection goals.

For starters, the absence of a commonly agreed definition of what natural capital is currently hampers its visibility as a potential investment and prevents the tracking and reporting of international public and private finance flows to natural capital. The CBD is well placed to initiate an effort akin to the one led by the IPCC on climate to ensure a consolidated definitional approach to the issue and accurate reporting of natural capital finance. In particular, the CBD could play a coordinating and convening platform role across national governments acting on Article 21 of the Convention that asks the parties to periodically review the effectiveness of their biodiversity financing mechanisms, including private finance ones.

A key governance aspect is supporting the creation of asset classes with standard metrics and baselines. In addition to the definitional effort suggested above, it is important for fast scaling up of investments to use harmonised taxonomy, common performance indicators and quality standards for consistent monitoring and reporting. Such effort is key as comparing

transactions against commonly set criteria and understandings could help build a track record for asset class creation.

Last, private finance for natural capital must be considered in the wider context of finance going to assets and activities harmful to natural capital. No amount of private finance to natural capital will be enough if investment into nature depleting activities keep on being financed, notably, finance for fossil fuel industries. Such a change entails a shift of finance to become 'nature-consistent' to fully harness the potential of private finance.

5.2 Landscape financing

Landscape financing models provide opportunities for overcoming barriers to the scalability and replicability of investments in sustainable agriculture and conservation. They are considered a key financing solution for developing a natural capital asset class.

Landscape financing programmes are essentially long-term, integrated and community-led. They are context-specific and require tailored, flexible and experimental financial instruments to address the challenges in a particular landscape. These challenges are often linked to the demand and supply problems of commodity value chains already in the landscape. Addressing these issues requires a wide array of investments that enable people to wean themselves off practices that might destroy natural capital, such as the overuse of scarce water resources or deforestation for charcoal production.

Although there is no blueprint for landscape financing models, almost all of them include three key components. The first of these components is a community trust fund. This ensures that proceeds from community-led conservation activities, such as from ecotourism, payment-for-ecosystem services (PES) and carbon credits are directed

towards the communities themselves. The creation of community trust funds also acts as an intermediary between households and traditional investors, and community trust funds can be grouped to increase access to financing solutions from larger institutional investors. Such funds need to be representative and equitable, as they are otherwise prone to elite capture and the perpetuation of existing inequalities. They do not necessarily need to be structured at the village- or community-level, but could also include marginalised groups such as women or young people.

The second is a shared understanding and aligned expectations between landscape models and actors, such as producers, communities, companies and the investor and finance community. Investors primarily need to provide patient, long-term capital rather than seeking short-term financial returns. Successful landscape programmes in the agricultural sector have also relied on long-term offtake agreements. Private companies committed to responsible sourcing or services, such as deforestation-free cocoa, food produced using climate-smart farming techniques or eco-friendly tourism, can provide certainty to farmers who are then incentivised to change their practices.

Third, there needs to be some investment in an asset or in a set of assets, which can be physical, natural or human. For example, to encourage the use of climate-smart agricultural practices, an investor needs to fund training opportunities for farmers. Investments in physical infrastructure or value chains might also be required, such as a cocoa processing facility, a bridge or a warehouse to enable sustainable value chains to thrive. These investments might need to occur in locations relatively far away from the landscape affected, and therefore require cross-jurisdictional thinking.

There are several examples of successful landscape financing programmes in sub-Saharan Africa. Some of them have used watershed agencies to finance the restoration of wetlands and waterbodies in Ethiopia and Kenya, such as a programme to promote forest cover in the Lake Naivasha Basin. The Green Cocoa Landscape Program (GCLP) in Cameroon and the Mai-Ndombe Emission Reductions Program in the Democratic Republic of Congo also serve as successful examples of landscape programmes that involved a wide array of actors. However, compared to other landscape programmes in

Latin America, projects in Africa lack access to upfront financing solutions.

DFIs can provide support in various ways, not just by offering patient capital but by de-risking private capital, for example by using first-loss guarantees. Development partners can also play an important role bringing different actors together, especially local communities and businesses and the wider investment community – and by moving away from their own project-focused models to landscape based interventions.

5.3 Tapping into carbon funds and pledges

Carbon offsets are the most established form of market for channelling private funds to natural capital. Carbon uptake and storage projects tend to be easily identifiable and scalable: the ecosystem has boundaries (forests, wetlands, peatlands); the service (carbon uptake and storage) can easily be monitored and ascertained (if the ecosystem is there, it is performing its uptake and storage function); and hence, they tend to be more verifiable. As such, carbon markets have lent themselves more to private-sector investments.

In the current bid to reach net-zero, there has been renewed interest and pledges from corporate companies and their philanthropic offshoots for voluntary and compliance investments in solutions that could mitigate, if not completely offset, their activities. Especially now that implementation rules for Article 6 of the Paris Agreement that focuses on GHG mitigation have finally been agreed at COP26 in 2021.

Given the characteristics of carbon markets described above, it is likely that natural capital assets providing such a service will see a major uptick in demand in the near future. (Although it is to be noted that not all carbon market projects support natural capital – some could be technology based carbon removal projects, for example)

Already in 2020, the total value of global carbon markets grew by more than 20% (GIC et al., 2021). This means that critical mass may soon be reached from an investment perspective.

Harnessing the potential of carbon markets for natural capital, however, needs to be done in

line with environmental and social safeguards to ensure fair and equitable benefit sharing of projects on the ground.

There is also scope to support 'micro' carbon trading whereby small community-led projects are funded via carbon credits. There have been some successful projects using revenues from carbon credits or climate funds drawing on the Clean Development Mechanism (CDM), for example. Such projects have supported tree planting in urban and rural areas to restore forests and protect agricultural and urban land and restoration of mangrove swamps to protect coastal urban areas. These have been financed by small payments for work and equipment to local communities using CDM-sourced carbon credit. However, these projects are currently small-scale and face difficulties in accessing carbon credits because of the complexity of the CDM processes. National or international facilitation could help overcome these issues by providing assistance to meet carbon-credit certification and trading requirements (Tyson, 2022 forthcoming).

5.4 Green finance for restorative agriculture

One potential source of private finance for biodiversity is green finance. This includes bank finance, private capital and publicly listed green bonds.

The global green bond markets had grown exponentially. By 2021, the market reached more than \$0.5 trillion annually with a 50% increase from 2020 to 2021 alone. This growth has been driven by the emergence of a strong green investor base, comprising not only specialist funds but also generalist investors seeking to address climate risks in their portfolios. This has been driven by complementary growth in the supply of green assets – most notably green infrastructure. (Lemma et al, 2021; Tyson, 2021)

However, while Africa's green bond market has been developing with the number and value of issuances increasing almost every year, the market remains small with Africa receiving only 2.2% of global proceeds to date and with no African country in the top 20 issuing countries in 2021 (Lemma et al, 2021; Tyson, 2021). Further, a very small proportion of these limited funds is being directed into biodiversity. Instead, 91% of green bonds proceeds were used for infrastructure and the remainder into

other non-biodiversity related sectors. In the banking sector, African banks could make an important contribution to supporting climate and biodiversity financing but, again, actual financing remains low – both absolutely and relatively. For example, in South Africa, which has the region's most developed economy and financial sector, commercial banks provided approximately \$1.3 billion in green financing by 2018. However, this is only 0.5% of total bank financing to the private sector and, as for green bonds, this was predominantly in infrastructure (Lemma et al, 2021).

Changing these statistics faces significant barriers. However, there are some bright spots, particularly for restorative agriculture. African economies remain heavily concentrated in agriculture. It is an area of considerable climate risk because it is predominantly rainfed and is also a sector where poverty is concentrated because much of the agricultural sector remains subsistence based. Restorative agriculture offers the potential for multi-dimensional impacts that might be attractive to green and impact investors. It can offer a combination of biodiversity and environmental benefits by maintaining current ecosystems, including those where agricultural activities take place in eco-sensitive environments (such as, for example, fisheries in marine areas or logging and natural-product harvesting in forests), or by reversing environmental degradation –including soil erosion and deforestation. It can also deliver this in combination with poverty reduction by increasing agricultural productivity and incomes.

Such multidimensional impact may be able to attract bolder impact and green investors to invest in restorative agricultural projects. This might most realistically be done using funds because of the agricultural sector being dominated by smallholders and informal multi-livelihood households, and so aggregating such small loans into securitisation-based bonds or funds will make them more 'investable' for such investors.

Similarly, in the banking sector, banks already provide significant finance to the agricultural sector, including smallholders and informal finance, with around 10% of lending to the sector (Lemma et al, 2021). This has given them significant experience in managing the risks associated with agricultural lending.

This experience could be extended to restorative projects if this was supported by 'ring-fenced' funds from DFIs or co-investments with DFIs providing technical assistance and blended finance to reduce risk. Such approaches have already been successful in increasing finance for other green finance, microbusinesses and SMEs in Africa including those in marginalised groups such as women. They could be replicated to direct finance into restorative agriculture.

This might also be best done as part of landscape financing projects to ensure integration and consistency in the multidimensional goals of such projects. Finally, specialist private capital funds may invest in biodiversity. Today, as for other commercial finance, green investments are concentrated in infrastructure. However, a few venture capital funds are dedicated to green finance opportunities in Africa related to biodiversity. For example, the investment fund CI Ventures provides capital to start-up and growth-stage small and medium-sized enterprises that work within conservation areas, including firms in Kenya and South Africa. It targets conservation-focused firms that cannot raise traditional funding because of their risk profile, and provides short-term loans, growth capital or equity to enable the implementation of innovative conservation approaches. Another example is the Ghanaian investment company Wangara Green Ventures, which focuses on high-growth, high-impact small and medium businesses including those engaging in climate-smart agriculture. (Lemma et al, 2021)

Again, expanding these funds – including from development capital – could expand their activities which will provide not only finance but also an 'incubator' approach to new ideas as to how restorative agriculture in the region might be expanded.

5.5 Holistic and clustered interventions

Historically, interventions by IFIs, DFIs and other development partners have been implemented independently. For example, technical assistance and development capital have not traditionally been implemented as part of a single programme.

Recent policy has challenged this. In financial development programmes, this has meant that technical assistance has been brought closer to actual financial transactions with the goal of tackling focused barriers as they relate to specific transactions. For example, the Africa Local Currency Bond Fund (which has capital funded by FSD Africa) delivers technical assistance and anchor capital in order to support bond issuances. This has proved effective in bringing first time issuers to market because they often do not have the capacity to, for example, meet listing requirements on stock exchanges, obtain green bond or social impact certification or represent themselves in rating evaluations without support.

Current evidence on impact assessment supports these holistic approaches. For example, UK FCDO reports that the impact of technical assistance and capacity building is enhanced when combined with other interventions. (UK FCDO,⁶ 2013) Similarly, evidence of development capital being impactful alone is 'patchy' (Spratt et al, 2019).

Despite this, appetite to expand technical assistance and capacity building for green finance in Africa in isolation from capital and sector development programmes continues. For example, the EIB's survey of banks found that they saw a lack of technical capacity as the main constraint on their increasing green and biodiversity investments and saw this as an opportunity to deliver more technical assistance – but without considering complementary interventions (Lemma et al, 2021). Similarly, there are a number of technical assistance programmes relating to development of national green bond markets in Africa but they have not been integrated with development capital (Tyson, 2021).

Given the complexity of biodiversity, there needs to be a greater shift towards holistic programming and impact evaluation. This is especially because it is an area where it would be effective in delivering greater impact that is 'greater than the sum of its parts.'

Some initiatives have already been established. For example, these include the Taskforce on Nature-related Financial Disclosures, the United Nations Environment Programme Finance Initiative (UNEP-FI) and the IFC's Alliance for Green Commercial Banks. But they remain

⁶ Formerly UK DFID.

too high level and focused on establishing standards, certification and 'dialogues'. A much deeper level of integration is needed and at a 'on the ground' level.

One of the key approaches to implementing such 'on the ground' integration is to 'cluster' initiatives as part of landscape approaches – as discussed above. Initiatives should include

integration of policy environmental expertise, community inputs, development capital, blended finance, technical assistance and capacity building. This should also be done across multiple development partners and national policies and programmes.



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